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Paulsboro Train Derailment

Paulsboro, NJ - EPA Region II

POLREP #4

Progress

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U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION/SITUATION REPORT
Paulsboro Train Derailment - Removal Polrep



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Region II

Subject: POLREP #4
Progress
Paulsboro Train Derailment

Paulsboro, NJ
Latitude: 39.8345751 Longitude: -75.2368212

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From: Terry Kish, On-Scene Coordinator
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Date: 12/4/2012

Reporting Period: 12/3/2012 @ 0700 to 12/4/2012 @0700

1. Introduction

1.1 Background

Site Number:	Contract Number:
D.O. Number:	Action Memo Date:
Response Authority: CERCLA	Response Type: Emergency
Response Lead: PRP	Incident Category: Removal Assessment
NPL Status: Non NPL	Operable Unit:
Mobilization Date: 11/30/2012	Start Date: 11/30/2012
Demob Date:	Completion Date:
CERCLIS ID:	RCRIS ID:
ERNS No.:	State Notification:
FPN#:	Reimbursable Account #:

1.1.1 Incident Category

Transportation Related - Conrail train car derailment

1.1.2 Site Description

1.1.2.1 Location

At approximately 0700 EST on 30 November 2012, Thirteen Conrail freight cars transporting chemicals and other goods derailed and overturned at a bridge crossing the Mantua Creek in Paulsboro, New Jersey. The incident occurred near the 200 block of East Jefferson Street. The Department of Transportation reported three cars fell into the creek. Conrail reported one of the tank cars released approximately 180,000 pounds of vinyl chloride into Mantua Creek. Onlookers also reported seeing a vapor cloud rise from the scene.

Mantua Creek is a stream in Mantua Township in Gloucester County. It flows northwest for 18.6 miles to the Delaware River at Paulsboro across from the Philadelphia International Airport. The FAA reports airport operations were unaffected. Mantua Creek is approximately 150 feet wide at the location of the bridge collapse. The incident occurred approximately 1.4 miles upstream of the outlet into the Delaware River.

The NTSB has been on scene since 1400 hours on 30 November 2012 conducting their investigation.

1.1.2.2 Description of Threat

USCG, NJDEP, EPA and Gloucester County Emergency Response, including HAZMAT, responded to the incident. Gloucester County Emergency Response initially ordered residents to shelter-in-place. A half-mile radius evacuation zone was also issued for local residents. Paulsboro High School was placed on lockdown at 0715 EST. The school was later dismissed. The Transportation Security Operation Center reported that 18 residents reported possible effects from the spill and were placed in a staging area for decontamination.

Vinyl chloride is an industrial chemical described as a colorless gas with a sweet odor and known to be highly toxic, flammable and carcinogenic. It is primarily used in the production of PVC. According to the Environmental Protection Agency, short-term exposure to high levels of vinyl chloride in the air has resulted in central nervous system effects such as dizziness, drowsiness and headaches.

Two VCM cars were directly involved in the accident. One car was pierced and off-gassed approx. three quarters of the 22,000 gallons of VCM. Self-refrigeration froze the remaining VCM inside the car. An oil sheen was observed and is attributed to hydraulic fluid from the bridge entering the creek. Hard and soft boom was deployed on the creek by private contractor.

1.1.3 Preliminary Removal Assessment/Removal Site Inspection Results

On November 30, 2012, EPA initiated air monitoring with the TAGA unit based in Edison, NJ. Preliminary results for VCM revealed ambient levels up to 1.3 ppm using actual GCMS.

2. Current Activities

2.1 Operations Section

2.1.1 Narrative

2.1.2 Response Actions to Date

Refer to Polrep 1 and 2 for previous actions.

On December 3 at 0300 hours, EPA was notified that a minor release of VCM had occurred within the exclusion zone relating to changes in operations. Approximately 600-800 gallons of product was thought to be remaining inside the tank, however the material was not transferrable via the same pumping technique. A plan was being developed to flood the tank with several thousand gallons of water and resume pumping into the empty rail cars. No elevated air monitoring results were observed in the community as a result of the release.

At 0430 EPA was notified that operations have been stopped. Because no additional product can be pumped from the tank, operations will change to flushing. The plans for the flushing will need to be approved by Unified Command. Operations are not planned to resume until 1200 hours on December 3.

EPA will continue air monitoring operations until 0600 hours to ensure that the temporary seal placed on the tank is secure. EPA, RST, ERT, and SERAS will resume operations at 1200 hours.

At approximately 0545 hours, CTEH air monitoring crews (Conrail contractor) reported VOC detections of 26 ppm at the intersection of E. Broad and Commerce Streets. EPA AreaRAE units in the vicinity identified much lower concentrations. EPA deployed RST and SERAS teams as well as the TAGA unit to the area. The TAGA reported VCM concentrations of 1 to 3.2 ppm in the areas closed to the exclusion zone. In addition, TAGA reported a concentration of 3.5 ppm at the Paulsboro High School. SERAS reported VOC results of 0.2 units at the Loudenslager Elementary School. RST reported VOC results of 0.4 to 0.8 units at the Billingsport Elementary School. No wind was present at the time and the air monitoring observations suggested that the sudden appearance of VCM vapor was likely due, at least in part, to a thermal inversion occurring at sunrise. Unified Command personnel determined that schools should be closed due to the elevated concentrations of VOCs around the Paulsboro neighborhood.

During the morning of December 3, Conrail decided to go to another plan to remove remaining VCM from the tank car. They will mix the VCM with alcohol and pump the solution into the empty tank cars. The transfer operation would be on-hold until the alcohol car arrives and is spotted close to the wreck.

At 2000 hours DEP reported to EPA that tactics had changed and acetone would be the solvent used to flush the VCM. The acetone would be transported to the scene in trucks and the mixture would be pumped directly back into the trucks. This operation is not anticipated to occur until Wednesday, December 5.

Unified Command determined that the current twelve block evacuation area would remain in effect until the VCM transfer is complete. The evacuation area will be shrunk to include only the 6 nearest homes while debris/wreckage removal is conducted. All evacuees will be allowed to return to their homes while

the derailed HazMat rail cars are lifted from the Creek. All Paulsboro schools will remain closed through the end of this week.

At 0430 hours, EPA accompanied Conrail and Paulsboro personnel to inspect several sewer locations to identify whether VCM may have entered the storm sewer system during high tide. VOC readings of 1-2 ppm were detected in some sewers, however the results are difficult to attribute to vapor to the sewer. Additional readings will be taken when ambient levels increase in the vicinity of the sewer.

Conrail performed no pumping operations over night. Air monitoring continued throughout the night. Readings as high as 40 ppm were observed inside the 12 block evacuation zone. Stagnant conditions prevented much movement of the plume outside of the evacuation zone however readings above the action level of 1 ppm were observed. The TAGA bus detected a concentration of 800 ppb VCM approximately 1.5 miles upstream of the incident along Mantua Creek. This may be related to contaminated water traveling upstream during high tide. Additional assessment may be required. EPA will coordinate with DEP water sampling efforts.

Air monitoring continued throughout the night. Elevated levels of VOCs were observed intermittently throughout the night as high as 40 ppm. Observations of concentrations exceeding 10 ppm were consistently observed within the exclusion zone or on the perimeter. The focus of mobile air monitoring teams was the perimeter of the evacuation zone. Although exceedances of the 1 ppm action level were observed, the readings were somewhat random and inconsistent.

2.1.3 Enforcement Activities, Identity of Potentially Responsible Parties (PRPs)

The PRP is Consolidated Rail Corporation (Conrail)

2.1.4 Progress Metrics

<i>Waste Stream</i>	<i>Medium</i>	<i>Quantity</i>	<i>Manifest #</i>	<i>Treatment</i>	<i>Disposal</i>

2.2 Planning Section

2.2.1 Anticipated Activities

EPA will continue to support the air monitoring efforts as requested by the Unified Command.

2.2.1.1 Planned Response Activities

2.2.1.2 Next Steps

Following the completion of the VCM transfer, the next steps will include the following:

- Conducting a dive to assess the condition of the derailed cars and to evaluate rigging needs,
- Continued NTSB investigation,
- Removal of non-HazMat rail cars, and
- The use of barge cranes to remove debris and lift HazMat rail cars from the creek.

2.2.2 Issues

2.3 Logistics Section

No information available at this time.

2.4 Finance Section

No information available at this time.

2.5 Other Command Staff

No information available at this time.

3. Participating Entities

No information available at this time.

4. Personnel On Site

EPA personnel and contractors onsite as of December 3@ 0300 hours.

1-EPA OSC
1-ERT (TAGA bus)
4-RST team members
3-SERAS team members

5. Definition of Terms

EPA - U.S. Environmental Protection Agency
RST - EPA Removal Support Team contractor, Weston Solutions, Inc.
SERAS - ERT Scientific, Engineering, Response and Analytical Service contractor, Lockheed Martin
VCM - vinyl chloride monomer

NTSB - National Transportation Safety Board
ppm - parts per million
ppb - parts per billion
ERT - US EPA Environmental Response Team
DEP - New Jersey Department of Environmental Protection
TAGA - Trace Atmospheric Gas Analyzer

6. Additional sources of information

6.1 Internet location of additional information/report

www.epaosc.org/paulsborotrainerailment

6.2 Reporting Schedule

7. Situational Reference Materials

No information available at this time.